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feet. That, to be sure, was not very much, but it must have materially altered the relative lengths of the wet and dry seasons.

Thus we have direct evidence to the following effect: For many thousand years, going back far beyond the recognized period of human habitation, the climate has been very much as it is at present. That was preceded by a slow rise of the land out of the sea, which caused the climate to change from wet to dry. But under the wet climate the elevation of the land was still too great, and perhaps the duration of the epoch was too short, to produce a luxuriant tropical vegetation; otherwise there would be to-day extensive coal-fields. However, the wet climate was sufficient to greatly alter the face of the country. Lake Titicaca was of enormous area, fed perhaps by the melting glaciers. In the almost continuous rainy season, huge turbid rivers roared and tumbled down these western slopes of the Cordillera, while on each mountain summit vast quantities of snow fell, only to pursue its way down the steep slopes, carving out valleys, building up ridges, and by its melting wearing out deep ravines, which grow smaller as they become lost in the broad level plain below. Under such luxuriance of moisture the valley of Arequipa must have teemed with animal and vegetable life, the barren hills to the south were clothed in green, and the desert of La Joya blossomed like a garden.

#### CURRENT NOTES ON ANTHROPOLOGY.—XVII.

[Edited by D. G. Brinton, M.D., LL.D.]

##### The Ancient Vans.

THE people who in proto-historic time lived at the foot of Mount Ararat, on the plains around Lake Van, and about the head-waters of the Araxes, were known to Herodotus as the Alarodi, which is a Greek form of the Assyrian *Urartu*, of which Ararat is the Hebrew form. They seem to have called themselves Chaldeans, *Chaldi*, but their language was neither Semitic nor Aryan. They learned to write it in cuneiform characters, and a considerable number of their inscriptions have been recovered, dating 750–850 B.C., about.

In a late number of the *Zeitschrift für Ethnologie* is a valuable contribution to our knowledge of these inscriptions by Messrs. Belck and Lehmann. The former traversed some five thousand kilometers of Russian and Turkish Armenia last year, and carefully copied quite a number of hitherto unknown Vannic inscriptions; to the decipherment of which Dr. Lehmann devoted himself with much success. They date from half a dozen different reigns previous to the destruction of the Vannic kingdom by Tiglath-pileser in 742 B.C.

The most interesting, the longest, and the most difficult to decipher, on account of the new words and ideograms it contains, is one from the stele of Rusas. It apparently was set up to celebrate the completion of some important works in irrigation and laying-out of gardens and orchards.

The inscriptions are carefully reproduced in autotype, and offer new and valuable materials for students of this little-known tongue.

##### Laws of Human Evolution.

The most valuable summary of the facts and laws of human evolution that I have seen for a long time is contained in the Cartwright Lectures for 1892, delivered by Professor Henry F. Osborn of Columbia College, New York. These admirably clear and able addresses, three in number, discuss the many knotty questions involved in this topic with temperate judgment and a complete mastership of the facts.

Many of his conclusions are of the utmost importance to the practical anthropologist, and to the majority will have a novel force; for instance, that man is anatomically quite degenerate, only his hand and his brain comparing favorably with mammalian anatomy generally. He is now in a state of very rapid evolution, or rather transformation, for, according to our author's figures, more than thirty of his organs are degenerating to twenty which

are developing. This action is especially active in certain centres, of which eight are mentioned; but in them the rate of change is by no means uniform. The most conspicuous variations are reversions, and in the matter of advance, the evidence is abundant that structure lags far behind function.

In the muscular system the evolution of a new type consists in the accumulation of anomalies in a certain direction by heredity. There are on the average nine anomalies of the muscles in each individual. How these come about is variously explained. The French theory that all anomalies reproduce earlier normal structures, seems too absolute. Here comes in the puzzling question as to what is the active force in producing variations, and preserving those which are valuable to the species. After a careful review of the evidence, the lecturer reaches the conclusion that the theory of use and disuse, along with the hereditary transmission of acquired variations, encounters less difficulties than that of the accumulation of fortuitous favorable variations by natural selection.

Of course, the theories of Weissmann, that acquired traits do not become hereditary, have to be considered, and are not found to be sufficiently established.

##### Suggestions for a Universal Language.

The evolution of linguistics is in two opposed directions; on the one hand, there are societies and patriotic guilds constantly cultivating and preserving dialects and isolated languages, printing papers in them, and trying to make the rest of the world learn them; and, on the other, there is a growing party demanding that some one or a very few tongues be adopted for the general commercial, social, and scientific business of the world. The latter class is again divided into those who would select one or two of the already existing languages, and their opponents, who think a new and simple tongue had better be manufactured for the purpose. Of the latter the *Internationale Weltsprache Gesellschaft* of Vienna is among the most active. It has just issued a "Grammatik der Weltsprache" (Mondolingue), which is but one of its many publications in favor of the tongue devised by Dr. Julius Lott, from whom (Wien, II. 2. Schüttelstrasse 3) these publications may be had.

Professor A. MacFarlane of Austin, Texas, has also a valuable paper in the Texas Academy of Science Transactions, on "Exact Analysis as the Basis of Language." He reaches the conclusion that a natural language is better suited to scientific development than one which is artificial. Another recent writer on the same subject is M. Raoul de la Grasserie of Rennes, France.

##### Languages of the Gran Chaco.

The extensive district in northern Buenos Ayres called El Gran Chaco, "The Great Hunting-Ground," has been linguistically almost a *terra incognita*. Inhabited by numerous roving tribes of uncertain affinities, up to the present time we have had of its numerous dialects only one published grammar, and for it no corresponding people could be found, none who speak the tongue which it sets forth!

This want has now been happily filled by two publications which have been issued by the Museo de la Plata; the one, a work composed in 1856 by the Rev. Francisco Tavolini, entitled "Reglas para aprender a hablar la Lengua Moscovita;" the other, by Samuel A. Lafone Quevedo, "Principios de Gramatica Mocovi." Both refer to the same dialect, better known as the Mbocobi. It is closely allied to the Abipone and Toba, and is a member of the stock which, in my "American Race," I have designated by the Tupi term, "Guaycuru."

The two works are in a measure supplementary, Mr. Lafone Quevedo having made use of previous writers, principally Barcena, Dobrizhoffer, and Tavolini, to form his analysis of the tongue. He is also the editor of Tavolini, and holds out the promise of other grammars of the Argentine languages, from unpublished sources. We who interest ourselves in such studies, shall look forward with interest to this series, and hope that the financial storms of the Argentine Republic will not delay its appearance.

### The Origin of Punishment.

The young science of ethnologic jurisprudence is one of the branches of anthropology destined to throw unexpected light on the origin and significance of many of our daily customs and beliefs. A most important contribution to it has recently appeared from the pen of Dr. S. R. Steinmetz, on the early development of punishment ("Ethnologische Studien zur ersten Entwicklung der Strafe." Leiden, 1892). It is the second volume of the work, which, for various reasons, has been published first. His aim has been, first, to offer to students an extensive collection of facts drawn from the customs of primitive peoples regarding the question of punishments; and, second, to analyze their sociologic and psychologic significance.

The present volume begins with a chapter on blood revenge, tracing its development into the ordeal and the trial by battle up to the modern duel. The effects of blood revenge on social condition are pointed out, some being highly advantageous, others evidently injurious. The administration of punishment by the state is treated with much clearness and from a wide range of reading. It is shown to have developed from the systems of correction adopted in the primitive family, and was often in the nature of a compromise or blood money. Several chapters of special interest relate to the position of woman with reference to family feuds and revenge, and the authority over the males which she exerted in various communities, some of matriarchal, others of patriarchal constitutions. The intense bitterness of her feelings, and her ferocity, far ahead of that of men, are referred to and illustrated. The punishment of slaves and that of military discipline are also discussed. A curious closing chapter is added on the punishment by the gods, in this world and the next, and its influence on human punishments. It will be seen from this brief reference how extremely interesting the book is.

### SCENTS AND THEIR RECOGNITION.

BY J. W. SLATER, LONDON.

THERE are some points connected with both the production and the recognition of odors by animals which seem to need further study. It is agreed that all species possessing the sense of smell at all, like and are attracted by the scent of their usual food, or of substances of a similar character. We have also evidence that animals are agreeably impressed with the specific odor of their own species, or of their own race or strain. On the other hand, they are disgusted and repelled by the emanations of hostile species.

These are results which we might expect on evolutionist principles, and which we actually detect whether we ascribe them to Professor Jäger's "soul-particles" or not. It is sometimes forgotten that peculiar odors not merely aid in the diagnosis of different human races but contribute no little to keep such races asunder. That the odor of the Negro or of the Australian "black-fellow" is repulsive to the white man is a familiar fact. But the aborigines of South America distinguish in the dark the smell both of the Negro and of the white man from that of their own race, and dislike the two former about equally. Even the two great branches of the white race, the Aryan and the Semitic, have a different and in many cases a mutually repulsive odor. During the recent anti-Semitic agitation in Germany and Austria the *Petor judæicus* did not escape comment.

At the same time we observe a few cases which we cannot well account for on the principles above laid down. Instance the feline group; the natural food of all such beasts is the flesh and blood of animals recently killed, and even in case of need, carrion. We might expect that beings habituated to such a diet would prefer odors not merely unlike but opposite to those which mankind select. Yet the fact remains that not merely the domestic cat but the leopard is passionately fond of the very same perfumes which we enjoy. Lavender, thyme,—in short, most plants rich in essential oils have a well-known fascination for the cat. Leopards have been charmed into docility and submission by means of lavender water. The difficulty becomes the

greater if we reflect that nothing similar has been observed among the canidæ which have a much more acute sense of smell than the cats. I suspect, though I cannot furnish distinct proof, that the plants in question act upon the felidæ as aphrodisiacs. What may be the reason why cats so persistently browse away *Nemophila pulchella*? Its cultivation in London suburban gardens may be pronounced impracticable except under the protection of wire-screens.

### THE PERCOPSIDÆ ON THE PACIFIC SLOPE.

BY CARL H. EIGENMANN, INDIANA UNIVERSITY.

THE Percopsidæ have hitherto been known from a single species having a very wide distribution. This species was discovered by Agassiz and described in his "Lake Superior."<sup>1</sup> He considered it a generalized type and relic of an older fauna. Professor Agassiz says (285): "Now the genus *Percopsis* is as important to the understanding of modern types as *Lepidosteus* and *Cestracion* are to the understanding of the ancient ones, as it combines characters which in our day are never found together in the same family of fishes, but which in more recent geological ages constitute a striking peculiarity of the whole class. My *Percopsis* is really such an old-fashioned fish, as it shows peculiarities which occur simultaneously in the fossil fishes of the chalk epoch, which, however, soon diverge into distinct families in the tertiary period, never to be combined again. . . . Now my new genus, *Percopsis*, is just intermediate between Ctenoids and Cycloids; it is, what an ichthyologist at present would scarcely think possible, a true intermediate type between Percoids and Salmonidæ."

During the past summer I made a series of collections of fishes through south-western Canada and the north-western United States. I collected in the streams emptying into Hudson's Bay and the Gulf of Mexico on the Atlantic side, and into Puget Sound and the Columbia River on the Pacific side of the continent. *Percopsis guttatus* Agassiz was found to be abundant in almost all the streams tributary to Hudson's Bay, from the Red River of the north to the Saskatchewan at Medicine Hat. In the Bow at Banff, at an elevation of 4,500 feet, it was no longer seen. The species seems to belong to the plains. It extends south to the Delaware River and Kansas, but is only rare south of the Great Lakes. It was not found in the Columbia at Revelstoke or at Golden, where collections were made, and which are nearly directly west of the localities where it was found to be so abundant, nor was it expected in these localities. When on my return trip I came to Umatilla, where the Union Pacific leaves the Columbia, and I noticed the favorable conditions for collecting, I concluded to stop, although the place was not on my itinerary and I would have but a short time for collecting. The Umatilla is a small stream which expands over a sand strip to form a shallow lagoon before emptying into the Columbia. I reached the station Sept. 6, at 5.20 P.M., and began work at once, as it was necessary to leave again at 4 the next morning. I was more than surprised to find that one of the most abundant fishes was a species of *Percopsidæ*, and that by this find the known habitat of this family was extended to the Pacific slope. Fishing was confined to the lagoon at the mouth of the Umatilla and to the Columbia immediately above this place. During the short time at my disposal over one hundred specimens of this family were obtained. No specimens were found in the Snake and its tributaries. It is really surprising that a species so abundant should have escaped detection till now unless its distribution is quite limited, as its absence at Golden and Revelstoke seems to indicate.<sup>2</sup>

The specimens prove to belong to an undescribed genus. The genus is more specialized than *Percopsis*, but still bears out Agassiz's idea of the family. It approaches much nearer the *Percidæ* than *Percopsis*, in that its dorsal and its anal fins are armed with strong spines, and its scales are much more ctenoid. In other words, its percoid affinities are much more pronounced than are

<sup>1</sup> Lake Superior: Its Physical Character, Vegetation, and Animals, Compared with Those of Other Regions. Boston, 1850.

<sup>2</sup> The elevation of Umatilla is given to be 800 feet by the Union Pacific Railway estimates.